

Elthenæum Subject Index to Periodicals.

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Æolian tones. By Lord Rayleigh.—Phil. Mag. Apl. 1915, pp. 433-444, 3 figs.

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Scientific principles of aerial navigation. By R. T. Glazebrook.—Engineering, 29 Jan. 1915, pp. 141-4; 15 Feb. pp. 170-2, 22 figs.

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European aerodynamical laboratories. [Abstract of report by A. F. Zahm in Smithsonian Misc. Coll. vol. 62, No. 3.]—Nature, 7 Jan. 1915, pp. 506-8, 3 figs.

Scientific aeronautic research. The new aerodynamic laboratory of the Massachusetts Inst. of Technology. By J. C. Hunsaker.—Sci. Amer. Suppt. 5 June, 1915, pp. 364-5, 5 figs.

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Aerial destruction of submarines. By T. F. Farman.—Field, 15 May, 1915, p. 844.

Aeroplane and the war. By Hill Johnson.—United Empire, Apr. 1915, pp. 250-8, illus.

Aeroplanes as targets [for machine guns].—Arms and Explosives, May, 1915, pp. 62-4, 1 fig.

Aircraft in war, and their counter measures. By O. F. G. Hogg.—Jl. R. Artillery, May, 1915, pp. 81-8.

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Aviation in warfare. By John B. C. Kershaw.—Engineering Mag. Jan. 1915, pp. 498-507, 14 figs.

Sykorsky [giant] biplane. By T. F. Farman.—Field, 1 May, 1915, p. 744.

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Problems of production in agriculture. [The ideal organization of research in agriculture is to associate an institution for the investigation of a particular class of problem with a university possessing an agricultural department.] By A. D. Hall.—Nature, 28 Jan. 1915, pp. 601-6.

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Correlating agriculture with the public school subjects in the Southern States. By C. H. Lane and E. A. Miller.—Bull. U.S. Dept. Agric. No. 132, Jan. 1915, 42 pp. 9 figs.

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Progress in small farm tractors. By L. W. Ellis.—Scient. Amer. 3 Apr. 1915, pp. 306-8, illus.

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Agricultural research at the Rothamsted Experimental Station. [Digest of Annual Report of Rothamsted Station, 1914.]—Nature, 10 June, 1915, pp. 405-6.

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Healthy atmospheres [description of instruments for testing physical conditions in and out of doors]. By Leonard Hill.—Nature, 22 Apr. 1915, pp. 205-7, 3 figs.

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Agricultural alcohol: studies of its manufacture in Germany. By Edward Kremers.—Bull. U.S. Dept. Agric. No. 182, Feb. 1915, 36 pp. 5 tab.

Alcohol for industrial purposes, official notice.—Jl. Soc. Chem. Ind. 30 Jan. 1915, p. 53.

Molasses as a source of alcohol for the production of power. By T. H. P. Heriot.—Jl. Soc. Chem. Ind. 15 Apr. 1915, pp. 336-40.

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Availability of the nitrogen in Pacific Coast kelps. By Guy R. Stewart.—Jl. Agric. Research, Apr. 1915, pp. 21-38, 5 tab.

Organic constituents of Pacific Coast kelps. By D. R. Hoagland.—Jl. Agric. Research, Apr. 1915, pp. 39-58, 7 tab.

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Alum in foods. Report submitted by the Referee Board of Consulting Scientific Experts.—Bull. U.S. Dept. Agric. No. 103, Apr. 1914, 8 pp.

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International struggle for manufactures as illustrated by the history of the alum trade. By R. Jenkins.—Sci. Prog. Jan. 1915, pp. 488-99.

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On the precision measurement of air velocity by means of the hot-wire anemometer. By Louis Vessot King. [With references to previous literature.]—Phil. Mag. Apl. 1915, pp. 556-77, 5 figs.

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Repellents for protecting animals from the attacks of flies. By H. W. Graybill.—Bull. U.S. Dept. Agric. No. 131, Sept. 1914, 26 pp.

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Anthropology.

Mankind in the making. The direct ancestor of the modern man and what he looked like. By W. P. Pyecraft.—Sci. Amer. 30 Jan. 1915, pp. 100-1, 1 illus.

Anthropometry.

Anthropométrie comparative des populations balkaniques. Par Eugène Pittard. [Excludes Bosnia, Herzegovina, and Montenegro. Includes measurements of European and Tatar races.]—C. R. Acad. Sci. 10 May, 1915, pp. 642-5; 25 May, pp. 681-5.

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Brooks aqueduct, Alberta. ["One of the greatest irrigation developments of modern times."]—Engineering, 23 Apr. 1915, pp. 451-4, 27 figs.

Architectural Acoustics.

Architectural acoustics. By Wallace C. Sabine.—Jl. Franklin Inst. Jan. 1915, pp. 1-20, 16 figs.

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From the Front. Military experience in the use of motor vehicles.—Motor Traction, 27 Jan. 1915, pp. 57-8; 4 Mar. 1915, pp. 147-148. In progress.

Motor v. horse convoys.—Motor Traction, 20 Jan. 1915, pp. 37-9, 4 figs.

Rail-power and sea-power. By Vernon Sommerfeld.—Brit. Rev. Mar. 1915, pp. 358-71.

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Canons, obusiers et mortiers. Ce qui les distingue. Par J. Netter. *La Nature*, 20 Feb. 1915, pp. 121-7, 17 figs.
Guns, ammunition, and accessories. By Edward P. O'Hern. [Recent constructions, &c., mainly for Panama Canal defence.]—*Jl. U.S. Artillery, Mch.-Apr. 1915*, pp. 161-95, 16 figs.

Artillery: Field and Mountain.

Notions sur le canon de 75. Par Th. Schlössing.—*Rev. Scientifique*, 8-15 May, 1915, pp. 161-70, 18 figs.
Soixante-quinze, The. [French 75 mm. field gun.]—*Engineer*, 22 Jan. 1915, pp. 77-8, 8 figs.

Astronomical Observatories.

Astronomy on the Pacific Coast. [The Lick Observatory and the Solar Observatory, Mount Wilson.] By Russell Tracy Crawford.—*Pop. Sci. Mthly. Mch. 1915*, pp. 209-22, 8 figs.
Paris Observatory and its work. By Geo. A. Hill.—*Sci. Amer.* 13 Mar. 1915, pp. 251 and 255, illus.

Atlantic Liners. See CUNARD STEAMSHIP COMPANY.

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Atomic Theory.

Modern views on the constitution of the atom. By A. S. Eve.—*Jl. Franklin Inst. Mch. 1915*, pp. 269-82, 3 figs.
Some aspects of the atomic theory. By Frederick Soddy.—*Sci. Prog. Apl. 1915*, pp. 573-85.
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Automobile Fare and Distance Recorders. See RECORDERS: *Fare and Distance*.

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Finance of the motor trade.—*Economist*, 2 Jan. 1915, pp. 8-10.
Ford methods and the Ford foundries. By Horace L. Arnold. [Art. 10. *N.B.*—This series commenced in Apr. 1914, with a biography and portrait of Henry Ford, the founder of the firm.]—*Engin'g. Mag. Jan. 1915*, pp. 524-50, illus. *In progress*.
Rise of the automobile.—*Sci. Amer.* 5 June, 1915, pp. 521-2 and 552, illus.

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Heavy motor vehicles—wheels and weights. By W. Worby Beaumont.—*Engineer*, 28 May, 1915, p. 523, 1 fig. 1 tab.
Wheels for commercial motors. By Thomas Clarkson. [Read before the Institution of Automobile Engineers.]—*Motor Traction*, 20 Jan. 1915, pp. 41-4, 6 figs.

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Ballons cerf-volants. Par Lucien Fournier.—*La Nature*, 25 June, 1915, pp. 411-3, 6 figs.

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Barley.

Morphology of the barley grain with reference to its enzyme-secreting areas. By Albert Mann.—*Bull. U.S. Dept. Agric.* No. 183, Apr. 1915, 32 pp. 8 pl. 7 figs.

Barley Culture.

Some distinctions in our cultivated barleys with reference to their use in plant breeding. By H. V. Harlan.—*Bull. U.S. Dept. Agric.* No. 137, Oct. 1914, 38 pp. 16 figs. 6 tab.

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Obituary.—*Engineering*, 18 June, 1915, pp. 681-3. *Portr.*

Basic Slag.

Inter-relationships between the constituents of basic slag. [Citric acid test of constituents of ingredients other than phosphorus.] By S. H. Collins and A. A. Hall.—*Jl. Soc. Chem. Ind.* 31 May, 1915, pp. 526-30.

Basket Making.

"Kustar" basket making [from bleached straw and Singapore cane. German secret bleaching process introduced by Makhaev.]—*In Russian Supplement to Times*, 28 June, 1915, p. 12.

Beans: New Species.

Five oriental species of beans. By C. V. Piper.—*Bull. U.S. Dept. Agric.* No. 119, Sept. 1914, 32 pp. 7 pl. 3 tab.

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Belts and Belting.

Belt driving. By H. T. Millar.—*Engineer*, 23 Apr. pp. 396-7; 30 Apr. pp. 421-2, illus.

Birds: Food.

Food of British wild birds. By Walton E. Collinge.—*Nature*, 7 Jan. 1915, pp. 509-12.

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New light on the great toothed divers of America. ["Remarkable bird forms of prehistoric times."] By R. W. Shufeldt.—*Sci. Amer. Suppt.* 23 Jan. 1915, pp. 52-3, 4 figs.

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Bird migration. By Wells W. Cooke.—*Bull. U.S. Dept. Agric.* No. 185, Apr. 1915, 48 pp. 4 pl. 20 figs.

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Studies in blackwater fever [in relation to quinine]. By J. W. W. Stephens and W. Stott.—*Ann. Trop. Med. Mar. 1915*, pp. 201-211, 3 figs. 3 tab.

Blast Furnace Gas Engines.

Large blast furnace gas engines. By H. Hubert.—*Engineer*, 21 May, 1915, pp. 511-4; 28 May, pp. 524-5.

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Admiralty boots. By Percy F. Fisher.—*Empire Rev. May, 1915*, pp. 160-3.

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Boxwood (*Buxus macowanii*) from South Africa.—*Bull. Imper. Inst. Jan.-Mar., 1915*, pp. 24-7.

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Natural history of British butterflies. By F. W. Frohawk. [A series of articles, with excellent illustrations.]—*Field*, 9 Jan. 1915, pp. 77-8. *Continued weekly*.

Cactus Solution as an Adhesive in Arsenical Sprays. See INSECTICIDES.

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Arithmetical machines. Their history, theory, and methods of construction. By H. E. Goldberg.—*Sci. Amer. Suppt.* 23 Jan. 1915, pp. 59-60; 30 Jan. pp. 75-6, 17 figs.

Canal Boats: Electric Traction.

Electric towing system for the Panama Canal Locks.—*Engineering Mag. Feb. 1915*, pp. 744-8, illus.

Towing locomotives for the Panama Canal. By C. W. Larson.—*Gen. Electric Rev. Feb. 1915*, pp. 101-17, 43 figs.

Towing locomotives for the Panama Canal.—*Engineer*, 2 Apr. 1915, pp. 323-5, 20 figs.

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Origin and early history of [canal] locks. By A. Forbes Sieveking.—*Field*, 10 Apr. 1915, pp. 648-50, 6 figs.
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Capillary constants and their measurement. By Allan Ferguson.—*Sci. Prog. Jan. 1915*, pp. 428-47, Bibliogr.

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Developments in cast-iron manufacture. By J. E. Johnson, Jr.—*Jl. Franklin Inst. Jan.-Feb. 1915*, pp. 59-93, 171-213.

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Magnesia cement. By C. H. B. Burlton.—*Engineer*, 14 May, 1915, pp. 471-2.

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Faced pearl barley. By J. F. Liverseege and Herbert Hawley.—*Jl. Soc. Chem. Ind.* 15 Mar. 1915, pp. 203-4.

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Development of chemical industry in Canada. By T. H. Wardleworth.—*Jl. Soc. Chem. Ind.* 15 Jan. 1915, pp. 3-6.

Chemicals, Manufacture and Industry: England.

Discussion on the effect of the European war on the chemical industry of Great Britain.—*Jl. Soc. Chem. Ind.* 15 Apr. 1915, pp. 327-9.

Poition of the organic chemical industry. Presidential address by Wm. Hy. Perkin. [On the cause of decadence in Great Britain—the value of scientific training—the Government scheme for the revival of the industry.]—*Trans. Chem. Soc.* vol. 107, 1915, pp. 557-78. *Abstr. in Jl. Soc. Chem. Ind.* 15 May, 1915, pp. 474-7.

Chemicals, Manufacture and Industry: Germany.

Chemical industries of Germany. By Percy F. Frankland.—*Jl. Soc. Chem. Ind.* 15 Apr. 1915, pp. 307-16.

German chemical industry thirty years ago. By Sir Henry Roscoe.—*Jl. Soc. Chem. Ind.* 30 Jan. 1915, pp. 65-8.

Chemicals, Manufacture and Industry: Russia.

Russian chemical industry. [Industries in the Donetz basin—extraction of Iodine from red seaweed (*Pryllophora*).]—*In Russian Supplement to Times*, 28 June, 1915, p. 9.

Chemicals, Manufacture and Industry: Scotland.

Discussion on the bearing of the present war crisis on the chemical industries of the East of Scotland.—*Jl. Soc. Chem. Ind.* 15 Apr. 1915, pp. 340-2.

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Papers by (1) R. M. Caven and (2) E. B. R. Prideaux.—*Jl. Soc. Chem. Ind.* 31 May, 1915, pp. 533-6.

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Cigar Manufacture and Trade.

Molds of cigars and their prevention. By R. H. True.—*Bull. U.S. Dept. Agric.* No. 109, June, 1914, 8 pp.

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Cinchona botanical station: i. account of a tropical station in Jamaica; ii. the native vegetation of the Cinchona region. By Duncan S. Johnson.—*Pop. Sci. Mthly.* Dec. 1914, pp. 521-30, 6 figs.; Jan. 1915, pp. 33-48, 16 figs.

Citrus Fruits.

Notes on the lime and the lemon as sources of citric acid and essential oils. By W. R. Dunlop.—*Bull. Imper. Inst.* Jan.-Mar. 1915, pp. 66-87.

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Seventy years of civil engineering.—*Sci. Amer.* 5 June, 1915, pp. 527-9, illus.

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Proposed wireless control of public clocks. By Alfred E. Ball. [*Ex. Horological Journal*, Jan. 1915, pp. 65-8; Feb. pp. 72-4, 5 figs.].—*Wireless World*, Apr. 1915, pp. 15-20, 5 figs.

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Evolution de l'échappement en horlogerie. Par Léopold Reverchon.—*La Nature*, 25 June, 1915, pp. 414-7, 9 figs.

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Re-fueling warships at sea. By Spencer Miller.—*Engineering*, 15 Jan. 1915, pp. 67-70; 22 Jan. pp. 118-22, 17 figs.

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Aeroplane in coast defence. By Samuel H. McLeary.—*Jl. U.S. Artillery*, May-June, 1915, pp. 283-330, 6 figs.

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Hydro-electric installation on a coffee plantation [in Guatemala]. By J. H. Torrens.—*Gen. Electric Rev.* Mar. 1915, pp. 219-21, 7 figs.

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Absolute zero. By Saul Dushman.—*Gen. Electric Rev.* Feb. 1915, pp. 93-100; Apr. pp. 238-48, 10 figs.

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Characteristic, A, of selective absorption [of typical coloured substances]. By A. J. Bull and A. C. Jolley.—*Phot. Jl.* Apr. 1915, pp. 134-40, 5 figs.

Colour analyses of two component mixtures. By L. A. Jones. [Of interest in connexion with recent two-colour work, photographic and kinematographic. Relates to red and orange-red acting with blue and blue-green.]—*Brit. Jl. Phot.* 5 Feb. 1915, Suppt. pp. 6-8; 5 Mar. Suppt. p. 11; 2 Apr. pp. 13-4, 11 figs.

Colour of Hair.

On the formation of hair pigment. By H. Onslow.—*Knowledge*, Apr. 1915, pp. 101-2.

Colour of Plants.

Anthocyan pigments. [On the chemical constitution of the colouring matters of flowers, some of which have been prepared synthetically.] By Arthur E. Everest.—*Sci. Prog.* Apr. 1915, pp. 597-612.

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Colour photography. By M. C. Rypinski.—*Sci. Amer. Suppt.* 27 Feb. 1915, pp. 134-5.

Interiors in natural colours by reflected light. By H. F. Perkins. [*Ex. Photo-Era*, Apr. 1915, pp. 177-9.]—*Brit. Jl. Phot.* 4 June, 1915, Suppt. pp. 22-4.

Colour Photography: Two-Colour Process.

Important development in colour photography. [The Kodachrome process of colour portraiture.]—*Sci. Amer.* 10 Apr. 1915, pp. 341 and 350.

Kodachrome process of colour portraiture. [*Ex. Phot. Jl.* Apr. 1915, pp. 140-3, with official instructions for new (red and green) face-to-face superposition process for transparencies.]—*Brit. Jl. Phot.* 7 May, 1915, Suppt. pp. 17-20.

Colour Photography: Three-Colour Process.

Notes on the improved Raydex colour-print process. By P. Davis.—*Brit. Jl. Phot.* 1 Jan. 1915, Suppt. pp. 1-2.

Pigment difficulty in the three-colour process. By C. Welborne Piper. [Supplementary to E. H. Gamble's paper on 'Modern developments in three-colour work,' *Phot. Jl.* Dec. 1914, pp. 359-69. His reply to C. W. P. appears in *B. J. P.* 5 Mar. 1915, Suppt. p. 12.]—*Brit. Jl. Phot.* 5 Feb. 1915, Suppt. pp. 5-6.

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Colour vision and colour vision theories, including the theory of vision. By F. W. Edridge-Green.—*Sci. Prog.* Jan. 1915, pp. 471-87, Bibliogr.

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Constitution of the alloys of copper with tin. By John L. Houghton.—*Engineering*, 9 Apr. 1915, pp. 419-22, 30 figs. 3 tab.

Influence of various temperatures on the properties of Admiralty gunmetal. By John G. Longbottom and A. Campion.—*Trans. Inst. Eng. and Shipbuilders in Scotland*, vol. 57, 1914, pp. 574-609, 40 figs. 16 pl. [tinted photomicrographs, &c.]

Some experiments upon copper-aluminium alloys. By J. H. Andrews.—*Engineering*, 16 Apr. 1915, pp. 446-7, 7 figs.

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Corrosion of non-ferrous alloys. By Cecil H. Desch.—*Jl. Soc. Chem. Ind.* 31 Mar. 1915, pp. 258-61, 1 fig.

Copper Industry and Trade.

Position of copper during the war. By John B. C. Kershaw.—*Engineer*, 7 May, 1915, pp. 458-9, 1 fig.

Copper: Metallurgy.

Copper smelting in Canada. [Digest of report issued by Canadian Dept. of Mines.]—*Nature*, 4 Feb. 1915, pp. 627-8.

New copper metallurgy. [Flotation method of concentrating sulphide ores. Hydro-metallurgy of copper.] By H. A. Megraw.—*Engineering Mag.* Feb. 1915, pp. 675-88, illus.

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Corrosion of iron. By L. C. Wilson. [i. General problems; ii. theories of corrosion; iii. protective measures; iv. paint materials.]—*Engineering Mag.* Jan. 1915, pp. 517-23. *In progress*

Corrosion and Anti-Corrosives (cont.).

Paint vehicles as protective agents against corrosion. By Maximilian Toch.—*Jl. Soc. Chem. Ind.* 15 June, 1915, pp. 592-4.
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Economic conditions in the Sea Island cotton industry. By Wm. R. Meadows.—*Bull. U.S. Dept. Agric.* No. 146, Sept. 1914, 18 pp. 5 tab.

Production of fine Sea Island cotton in . . . St. Vincent. [Abstract of paper by W. N. Sands.]—*Jl. Roy. Soc. Arts*, 8 Jan. 1915, pp. 148-9.

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Spinning tests of upland, long-staple cottons. By Fred Taylor.—*Bull. U.S. Dept. Agric.* No. 121, June, 1914, 20 pp. 11 tab.

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Cutlery works of Thiers. By Jacques Boyer.—*Sci. Amer.* Suppt. 20 Mar. 1915, pp. 184-5, illus.

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Effect of the cattle tick [and spraying] upon the milk production of dairy cows. By T. E. Woodward, W. F. Turner and Cooper Curtice.—*Bull. U.S. Dept. Agric.* No. 147, Jan. 1915, 22 pp. 6 figs. 2 tab.

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Ancient and modern dentistry. By C. Edward Wallis.—*Sci. Prog.* Jan. 1915, pp. 500-9, 4 figs. 2 pl.

Destructive Distillation. See DISTILLATION: *Destructive.***Diesel Engine.** See GAS AND OIL ENGINES.**Discovery, Scientific.**

Attempts to manufacture scientific discovery. By Ronald Ross.—*Nature*, 7 Jan. 1915, p. 512.

Industrie française pendant les guerres de la Révolution et de l'Empire. Par A. Chaplet. [Improvisation and invention due to restricted commerce and military necessity.]—*La Nature*, 6 Mar. 1915, pp. 163-7, 5 figs.

Savoir positif et le progrès. Par Enrique Hauser. [Theory of knowledge and invention, scientific provision.] *Rev. Scientifique*, 8-15 May, 1915, pp. 170-7; 22 May - 9 June, pp. 201-8.

State aid for science. By C. A. Buckmaster.—*Nature*, 14 Jan. 1915, pp. 547-53.

Disinfection and Disinfectants.

Use of flue gas for fire-extinction and fumigation [of ships' cargoes]. By Geo. Harker.—*Jl. Soc. Chem. Ind.* 27 Feb. 1915, pp. 157-9, 2 figs.

Disinfection: Clothes.

Nouveau dispositif pour la désinfection des effets d'habillement. Par F. Bordas.—*C. R. Acad. Sci.* 11 Jan. 1915, pp. 80-2.

Disinfection: Hides.

A bacteriological study of the methods for the disinfection of hides infected with anthrax spores. By F. W. Tilley.—*Jl. Agric. Research*, Apr. 1915, pp. 65-92, 14 tab.

Distances: Measurement.

Measurement of distances in war. [Descriptive of instruments in use.]—*Sci. Amer.* Suppt. 22 May, 1915, pp. 324-5, 10 figs.
Stereoscopic range-finder. By Frederick J. Cheshire.—*Optician*, 12 Feb. 1915, pp. 278-81, 3 figs.

Distances: Recording. See RECORDERS: *Far and Distance.***Distillation: Destructive.**

Fractional collection of crude tar. By Geo. Thomson Purves.—*Jl. Soc. Chem. Ind.* 15 Apr. 1915, pp. 329-36, 2 figs.

Yields [of alcohol, tar, and charcoal] from the destructive distillation of certain hardwoods. By L. F. Hawley and R. C. Palmer.—*Bull. U.S. Dept. Agric.* No. 129, Sept. 1914, 16 pp. 3 figs. 9 tab.

See also PETROLEUM.

Distillation of Alcohol. See ALCOHOL: *Denatured.***Ditch-digging Machinery.** See EXCAVATING MACHINERY.**Docks.**

Utilization of ground adjoining harbours and railway stations by the aid of mechanical conveyors. By Heinr. Ollendorff. [Based upon the work of von Hanfstaengl.]—*Trans. Inst. Eng. and Shipbuilders in Scotland*, vol. 57, 1914, pp. 254-306.

Dog as Draught Animal.

Chiens de guerre. Par C. Latour.—*La Nature*, 3 Apr. 1915, pp. 229-32, 8 figs.

Doxford Engine. See GAS AND OIL ENGINES.**Drugs.**

Industrie pharmaceutique française et la concurrence allemande. Par Jacques Boyer.—*La Nature*, 20 Mar. 1915, pp. 195-200, 5 figs.

Drugs: Vegetable.

Investigations of vegetable drugs and poisonous plants. [Of ten "native drugs" only *Podophyllum Emodi* and *Hyoscyamus muticus* gave results of material value.]—*Bull. Imper. Inst.* Jan.-Mar. 1915, pp. 28-65.

Ductless Glands. See GLANDS: *Ductless.***Dust Prevention on Roads.** See ROADS.**Dust Columns.** See WHIRLWINDS.**Dyes and Dyeing.**

Aniline dye industry: debate in House of Common analysed. By Sir Clement Kinloch-Cooke.—*Empire Rev.* Mar. 1915, pp. 59-72.

Aniline dye industry, its position and prospects. By William Pearce.—*Empire Rev.* May, 1915, pp. 150-3.

Moulton (Lord) on aniline dyes.—*Empire Rev.* Jan. 1915, pp. 273-84.
See also CHEMICALS: *Manufacture, &c.*

Dyes: Natural. See INDIGO.**Dynamite.** See NITRO-GLYCERIN.**Ear Plugs.**

Sound deadeners for ear protection [against gunfire].—*Arms and Expl. Feb.* 1915, p. 22.

Earth Movements.

Tides in the earth's crust, and the elasticity of the globe. By Alphonse Berget.—*Sci. Amer.* Suppt. 12 June, 1915, pp. 382-3, 1 fig.

Earthquakes.

Great Alaskan Earthquakes of 1899. By Charles Davison.—*Knowledge*, June, 1915, pp. 168-72. *In progress.*

Prevision of earthquakes. By Charles Davison.—*Sci. Prog.* Apr. 1915, pp. 639-45.

Earths: Rare.

Exploitation des terres rares du Brésil enlevée aux allemands. Par Jacques Boyer.—*La Nature*, 15 May, 1915, pp. 324-7, 3 figs.

Earthworms.

Peculiarities of earthworms. By E. Korschelt.—*Sci. Amer.* Suppt. 9 Jan. 1915, p. 23, 2 figs.

Education: Technical. See AGRICULTURAL EDUCATION; CHEMISTRY: *Study and Teaching.***Efficiency: Industrial.**

Standardization of methods in the railroad shop. By Ernest Cordeau. [ii. Conservation of material; iii. wage systems].—*Engineering Mag.* Feb. 1915, pp. 722-7. *In progress.*

Egypt: Ancient—Metallurgy. See METALS: *History.***Egyptian Wheat.** See WHEAT.**Electric Apparatus and Appliances.**

Developments in electrical apparatus during 1914. By John Liston.—*Gen. Electric Rev.* Feb. 1915, pp. 80-93, 24 figs.

Electric Conductivity.

Electrical properties of conductors at very low temperatures. By Francis Hyndman. [Explains difficulties in the electron theory of conduction.]—*Sci. Prog.* Apr. 1915, pp. 588-96.

Measurement of electric conductivity of vapours above 1500° C. at normal pressure. By E. F. Northrup.—*Jl. Franklin Inst.* Mar. 1915, pp. 337-52, 13 figs.

Electric Industries.

Electrical industries. [Special historical and descriptive review for the Panama Pacific Exhibition: 18 articles on special industries, &c.]—*Gen. Electric Rev.* June, 1915, pp. 415-596, illus.

Electric Lamps: Incandescent.

Electric light: a factor in civilization. [Development of the incandescent lamp.] By S. E. Doane.—*Jl. West. Soc. Eng.* Jan. 1915, pp. 1-14, 3 figs.

Electric Lamps: Photographic. See PHOTOGRAPHY: *Artificial light.***Electric Lighting.**

Illumination of the Panama Pacific Exposition. By W. D'A. Ryan.—*Sci. Amer.* Suppt. 12 June, 1915, pp. 376-7, 3 figs.

See also STREET SIGNS: *Electric.*

Electric Power Plants.

Air filters for turbo-generators.—*Engineer*, 1 Jan. 1915, pp. 21-2; 8 Jan. pp. 36-7; 22 Jan. pp. 81-3, illus.

Alabama power scheme.—*Engineer*, 5 Feb. 1915, pp. 132-5, 8 figs.

Swiss turbo-generator sets.—*Engineer*, 19 Feb. 1915, pp. 179-82; 26 Feb. pp. 204-6.

Electric Railways. See RAILWAYS: *Electrification.***Electric Traction on Canals.** See CANAL BOATS: *Electric Traction.***Electricity in Coal Mining.**

Central station power in coal mining operations. [Advantages of purchased power in colliery working even if obtained at higher cost.] By Thomas Robson Hay.—*Engin'g Mag.* Mar. 1915, pp. 833-48, illus.

Electrification of Railways. See RAILWAYS: *Electrification.***Electro-Chemistry: Industrial.** See NITRATES: *Electrolytic Production.*

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